IN THE SPECIFICATION:

Please amend the specification as follows:

[0014] The inventive method provides a number of distinct benefits or advantages. In particular, reintroducing purified water – either [gray] grey water or essentially salt-free water – back down into a lower portion or portions of the hydrate fractionation column where hydrate is present sets up a circulation pattern that greatly enhances the rate at which the hydrate is brought up to the hydrate dissociation region. Because hydrate dissociation is essentially a surface phenomenon – in other words, hydrate dissociates from the surface inwardly, rather than simply crumbling or otherwise disintegrating when it is brought into a lower pressure (or higher temperature) region where it is no longer stable – the faster the hydrate can be brought into the upper part of the dissociation region from which the released fresh water is recovered, the lower the volume of gas released in the lower part of the fresh water area will be. By bringing the hydrate into the upper part of the dissociation region as rapidly as possible – essentially anywhere above the hydrate stability phase boundary, but preferably or ideally into the large tank area at the top of the hydrate fractionation column – the possibility that the fresh water in the column will be excessively infused with gas bubbles is minimized. That is beneficial because excessive gas bubbles in the fresh water portion of the hydrate fractionation column may exert an upward force that lifts or pulls the subjacent seawater upwardly from the lower portions of the column, to the detriment of the desalination process.

[0038] Once the hydrate has dissociated into its constituent fresh water and gas or gases, the fresh water is pumped off, e.g. as at 54, and the gas is captured and recycled. (Provisions may be made for liquifying certain gases where this is desired.) Additionally, a portion of the water in the dissociation and heat exchange region 50 will be "grey [gray] water," which is fresh water containing some small portion of salts that have been removed from the hydrate by washing of the hydrate with water. The distinction between the "gray" or mixed water and pure fresh water is indicated schematically by dashed line 56. The [gray] grey water may be suitable for drinking, depending on the salt concentration, or for agricultural or industrial use without further processing.

The cold, gray water may be recycled back into the fractionation column, either by pumping it back down to the hydrate formation section 34, as indicated at 58; or it may be injected back into the concentrated hydrate slurry at a region of the fractionation column located above the heat extraction portion 44, as indicated at 60, to increase the fluid nature of the hydrate slurry and to aid in controlling overall thermal balance of the system. Furthermore, providing grey [gray] water at 62 to dilute residual interstitial fluid allows for pre-dissociation washing.

[0050] As is the case with the embodiment shown in Fig. 2, warmed water is pumped out of the system, this warmed water being water which has circulated within the water jacket. In contrast to the embodiment shown in Fig. 2, however, the intent of removing warmed water from the water jacket is not to remove so much heat energy that the input water is automatically cooled to temperatures suitable for formation of the hydrate at the base of the column, but rather it is simply to remove enough heat energy to prevent water within the interior of the hydrate formation conduit from becoming so warm that hydrate cannot form at all. Accordingly, the rate at which warm water is removed from the water jacket may be relatively small compared to the rate at which warm water is removed from the heat extraction portion 44 of the embodiment shown in Fig. 2. As a result, it is necessary to supplement the cooling which takes place in the heat exchange and dissociation region 150 using supplemental "artificial" refrigeration means 152. Operation is otherwise similar to that of the embodiment shown in Fig. 2: fresh water is extracted from the upper portions of the heat exchange and dissociation portion 150; "grey [gray] water" is extracted from lower portions of the heat exchange and dissociation region 150, i.e., from below the line of separation 156; and concentrated brine is removed from brine sump 141.

[0058] As illustrated and described above in connection with Fig. 2, generally purified water (e.g., "grey [gray] water") may be drawn from the upper reaches of the hydrate fractionation column and recirculated back down and reintroduced into a lower portion of the hydrate-fractionation column, where hydrate still exists. Reintroducing purified water – either [gray] grey water or essentially salt-free water – back down into a lower portion or portions of the hydrate fractionation column where hydrate is present sets up a circulation pattern that greatly enhances the rate at which the hydrate is brought up to the hydrate dissociation region, which provides a number of benefits.